# BMW advances factory automation with automated driving technology



As the automotive industry continues to adapt to the demands of modern manufacturing, BMW is implementing a significant advancement in factory automation with its Automated Driving In-Plant (AFW) initiative. This innovative development, which began with pilot projects in 2022, utilises lidar technology to allow vehicles to self-navigate within BMW's assembly plants, enhancing efficiency and reducing labour-intensive processes.

Previously, human drivers were required to manoeuvre new vehicles from the production line to testing areas, creating logistical challenges in terms of human resources and time management. With the introduction of the AFW system, this process is now being automated, which not only streamlines operations but also enables workers to focus on other aspects of production. The first successful implementation of this system occurred at BMW’s plant in Dingolfing, Germany, where models such as the 5 Series and 7 Series were among the first to autonomously navigate through the factory settings.

Milan Nedeljković, a member of the Board of Management at BMW AG responsible for production, remarked on the significance of this technology, stating, "Automated Driving In-Plant optimizes our production process and delivers significant efficiency gains for our logistics. That is why we will be swiftly rolling out this technology throughout our production network."

Following the success at Dingolfing, BMW has rolled out the AFW system to its Leipzig plant, where the MINI Countryman is among the models benefiting from this new automated approach. BMW anticipates that approximately 90 percent of both BMW and MINI models produced in Leipzig will utilise this technology. The company is also planning to integrate the AFW system into its Regensburg, Germany, and Oxford, UK plants later this year, with the future Debrecen facility in Hungary poised to join the programme.

The applications of the AFW system are expected to expand further, with future updates allowing newly assembled vehicles to navigate testing zones and outdoor distribution areas autonomously. As vehicles incorporate more advanced components for driver assistance, these additions will enhance the AFW system's functionality by providing supplementary situational awareness to the existing lidar infrastructure.

Nedeljković anticipates a significant volume of operation with these driverless systems, stating, “Over the next ten years, we will log several million test kilometers with Automated Driving In-Plant in our production network alone." This approach underscores BMW's commitment to advancing automation and digitalisation within their production processes, setting the stage for potential future applications related to autonomous driving capabilities.

The development of the AFW system is a collaborative effort, primarily led by Embotech AG, which partnered with Outsight and Hesai to create the vehicle guidance structure leveraging lidar technology. The system operates with advanced lidar software from Outsight that tracks vehicles and surrounding obstacles, while Hesai supplies the lidar sensors that enable real-time navigation capabilities.

Alexander Domahidi, CTO and founder of Embotech, highlighted the effectiveness of this partnership, stating, "The combination of Outsight's sophisticated lidar software platform and Hesai's reliable lidar sensors perfectly complements Embotech's autonomous driving expertise." This synergy aims to establish high standards of safety and efficiency as BMW ventures deeper into the realm of automated manufacturing.

As BMW integrates these emerging technologies into its manufacturing process, the implications for the broader automotive industry could set a new benchmark for factory automation, reshaping traditional business practices and operational methodologies.

Source: [Noah Wire Services](https://www.noahwire.com)

## References

* <https://www.piston.my/2024/12/03/bmws-automated-driving-in-plant-system-moves-closer-to-full-implementation/> - This article supports the claim that BMW is implementing Automated Driving In-Plant (AFW) technology in its factories, starting with a pilot project in Dingolfing, Germany, which has now received CE certification.
* <https://www.automotivemanufacturingsolutions.com/smart-factory/bmw-dingolfing-advances-ifactory-automated-driving-in-production/46481.article> - This source corroborates BMW's expansion of AFW technology across its production network, including plans for its Leipzig, Regensburg, and Oxford plants.
* [https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production:-bmw-group-enables-automated-driving-for-new-vehicles?language=en](https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production%3A-bmw-group-enables-automated-driving-for-new-vehicles?language=en) - This press release from BMW Group details the implementation of Automated Driving In-Plant technology at its Dingolfing and Leipzig plants, highlighting efficiency gains and future expansion plans.
* [https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production:-bmw-group-enables-automated-driving-for-new-vehicles?language=en](https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production%3A-bmw-group-enables-automated-driving-for-new-vehicles?language=en) - This article provides a quote from Milan Nedeljković about the efficiency benefits of AFW technology and its rollout across BMW's production network.
* <https://www.automotivemanufacturingsolutions.com/smart-factory/bmw-dingolfing-advances-ifactory-automated-driving-in-production/46481.article> - This source mentions Milan Nedeljković's statement about logging several million test kilometers with AFW technology over the next decade.
* [https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production:-bmw-group-enables-automated-driving-for-new-vehicles?language=en](https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production%3A-bmw-group-enables-automated-driving-for-new-vehicles?language=en) - This article explains how the AFW system uses lidar technology and external sensors to enable vehicles to navigate autonomously within BMW's plants.
* <https://www.piston.my/2024/12/03/bmws-automated-driving-in-plant-system-moves-closer-to-full-implementation/> - This article describes the initial implementation of AFW at BMW's Dingolfing plant, where vehicles like the 5 Series and 7 Series are autonomously driven through the factory.
* <https://www.automotivemanufacturingsolutions.com/smart-factory/bmw-dingolfing-advances-ifactory-automated-driving-in-production/46481.article> - This source details BMW's plans to integrate AFW technology into its Regensburg and Oxford plants, as well as the upcoming Debrecen facility in Hungary.
* [https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production:-bmw-group-enables-automated-driving-for-new-vehicles?language=en](https://www.press.bmwgroup.com/global/article/detail/T0446493EN/high-tech-in-production%3A-bmw-group-enables-automated-driving-for-new-vehicles?language=en) - This article mentions the collaboration between BMW and Embotech AG in developing the AFW system, leveraging lidar technology for vehicle guidance.